ACCURATE LINEAR PARAMETER
ESTIMATION WITH NOISY INPUTS

ABSTRACT

A method of building a model for a physical plant in the presence of noise can include initializing the model of the physical plant, wherein the model is characterized by a parameter vector, estimating an output of the model, and computing a composite cost comprising a weighted average of an error between the estimated output from the model and an actual output of the physical plant, and a derivative of the error. The method further can include determining a step size and a model update direction. The model of the physical plant can be updated. The updating step can be dependent upon the step size. Another embodiment can include the steps of determining a Kalman gain and determining an error vector comprised of two entries weighted by a scalar parameter.